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**Identification of a novel common proviral integration site, flit-1, in feline leukemia virus induced thymic lymphoma.**

**Journal:** Virology

**Publication Year:** 2009

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**PubMed link:** 19203775

**Funding Grants:** CIRM Stem Cell Biology Training Grant

**Public Summary:**

The present study demonstrated that flit-1 locus was a frequently targeted genetic site in FeLV-induced thymic lymphomas and the insertion might have an effect on expression of the nearby gene, such as ACVRL1. The significance to malignant induction of insertional mutagenesis of these regions may be related to the action of particular retroviruses or to the induction of particular tumor types.

**Scientific Abstract:**

A new proviral integration site for feline leukemia virus (FeLV), termed flit-1, was identified from feline thymic lymphoma. Among 35 FeLV-related tumors examined, 5 of 25 thymic lymphomas demonstrated proviral insertion within flit-1 locus whereas none of four alimentary and five multicentric lymphomas and one T-lymphoid leukemia examined had rearrangement in this region. Extensive sequence analysis has shown that flit-1, which is noncoding, is conserved on human chromosome 12 and mouse chromosome 15. The human and murine homologs of flit-1 are positioned approximately 30-kb upstream to activin-A receptor type II-like 1 (ACVRL1/ALK1) gene. Expression of ACVRL1 mRNA was examined in two of five lymphomas with flit-1 rearrangement and detected in both of the two whereas normal thymuses and seven lymphoid tumors without flit-1 rearrangement had no detectable expression. Therefore, flit-1 appears to represent a novel FeLV proviral common integration domain that may influence lymphomagenesis as insertional mutagenesis.

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